

The status, identification and vocalisations of African fishing owls with particular reference to the Rufous Fishing Owl *Scotopelia ussheri*

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Résumé: L'état et l'identification des trois chouette-pêcheuses d'Afrique sont débattus en faisant particulièrement référence à l'espèce la moins connue, la Chouette-pêcheuse à dos roux, *Scotopelia ussheri*. Les cris des trois espèces sont illustrés et comparés. Les observations des deux espèces de plus petite taille sont décrites.

The distribution of fishing owls of the genus *Scotopelia* is centred upon the Upper and Lower Guinea forests of Africa, where three species occur, namely Pel's *Scotopelia peli*, Vermiculated *S. bowieri* and Rufous *S. ussheri* (Figure 1).



Figure 1 Distribution of fishing owls in Africa (after Allport *et al.*⁶; Collar and Stuart¹; Fry *et al.*; Snow³)
Figure 1 Répartition des chouette-pêcheuses en Afrique (d'après Allport *et al.*⁶; Collar et Stuart¹; Fry *et al.*; Snow³)

We know little about the Rufous Fishing Owl, a poorly-known endemic of Upper Guinea, categorised as 'Rare' in the African bird red data book¹. The species was first described in 1871, from Fantee in Ghana²; its rarity and secretive nature mean that only about 30 records have been submitted to date, including those of several captive birds.

As part of a four-month University of East Anglia / ICBP expedition in 1992, three of the authors (P.W.A., A.P.K. & S.G.R.) visited the previously unsurveyed

forests and savanna of Mount Loma in Sierra Leone³. We looked for species endemic to the Upper Guinea, which included searching river corridors for Rufous Fishing Owls. We saw these on seven occasions, providing us with an opportunity to make notes on their behaviour and identification. Detailed notes on habitat selection, and observations of this and other species in Loma, appear in Atkinson *et al.*³.

This paper summarises sightings of fishing owls, published and unpublished, and attempts to draw some conclusions on the birds' status and ecology. We hope to clarify past confusion on the distribution and identification of the three species, incorporating information gathered from captive birds (R.W.) and sound recordings from the British Library (R.R. and R.W.).

Status of fishing owls

The main range of Pel's extends from Nigeria eastwards to the Central African Republic and south through Congo to Natal; scattered records have also come from Senegambia, through Upper Guinea and on the north-eastern extremity in south-east Sudan. Its extensive range makes it sympatric, or partly so, with the two smaller species of fishing owl⁴. Vermiculated and Rufous, on the other hand, are allopatric. Rufous is restricted to Upper Guinea, whilst Vermiculated occurs from Cameroon eastwards, through the Congo basin to the Central African Republic, but has not been reliably recorded west of Cameroon, although there are some possible records from Côte d'Ivoire⁵. These latter records were based on call alone, and we need sight evidence to substantiate them. All small fishing owls specifically identified in Upper Guinea have proved to be Rufous. It has a localised distribution, occurring in all the coastal countries from Guinea through to Ghana. Table 1 shows that Rufous has been seen in each country within the Upper Guinea block since 1985, suggesting that it is a widespread, but probably scarce, species.

Table 1 Numbers of Rufous Fishing Owls *Scotopelia ussheri* recorded in the Upper Guinea
Table 1 Nombre de Chouette-pêcheuses rousses, *Scotopelia ussheri* repérée en Haute-Guinée.

	Ghana	Cote d'Ivoire	Liberia	Sierra Leone	Guinea	Unknown
Up to 1985 ^a	3	2+	8	3	1	1
Post 1985 ^b	2	2	1	3	0	

^aCollar & Stuart¹

^bFrom Allport¹⁵, Allport *et al*¹⁶, Demey & Fishpool⁹, R. Martins verbally, this study

Identification of fishing owls

The main identification features for all three species are set out in Table 2. In the Upper Guinea forest the Rufous Fishing Owl is likely to be confused only with Pel's Fishing Owl. In the field, the first impressions of Rufous are of a medium-large, pale-rufous owl with light rufous breast streaking (Figure 2). In contrast, Pel's is a large owl with heavy brown spotting on the breast (Figure 3). The smaller size and faint breast streaking of Rufous are enough to determine any fully grown bird in the field. Vermiculated is smaller than Pel's and has brown upper parts and brown breast streaking. The streaks are long and narrow on Vermiculated (Figure 4) contrasting with the chevrons on the breast of Pel's. Vermiculated is superficially like Rufous, but it lacks the rufous markings on the breast and mantle.

There is confusion in the literature about the eye colour of Rufous Fishing Owl. Mackworth-Praed and Grant⁶ state that the eye colour of immatures and females is brown, whilst in males it is yellow. The

museum label on a specimen at the British Museum, Tring records 'iris deep brown, rim creamy yellow'. Fry *et al*⁷ also state the yellow eye colour in adults of both sexes as a field character but illustrate them as brown, confusing matters further. However, all recently published sightings, including those in London Zoo, have dark brown or black eyes. Boyer and Hume⁸ also report the eyes of live birds (presumably the London Zoo individual) as brown and so we conclude the yellow eye colour should not be used as an identification feature. Leg colour has also been given wrongly as a feature to distinguish Pel's from the other two species. Fry *et al*⁷ state that Pel's has dark legs while the other two species have yellow legs. In fact, all three species have yellow or straw coloured legs.

Field description of Rufous Fishing Owl

There are some discrepancies between published descriptions of Rufous Fishing Owl. We took the following description from notes made in Loma and from captive birds.



Figure 2 Captive adult Rufous Fishing Owl *S. ussheri*. Chester Zoo 1993. (R. Wilkinson)

Figure 2 Chouette-pêcheuse à dos roux, *S. ussheri*, spécimen adulte en captivité au zoo de Chester, 1993. (R. Wilkinson)



Figure 3 Captive adult Pel's Fishing Owl *S. peli*. Menagerie du Jardin des Plantes, Paris. (Dr M.A. Schlee)

Figure 3 Chouette-pêcheuse de Pel, *S. peli*, spécimen adulte en captivité à la Ménagerie du Jardin des Plantes, Paris. (Dr M.A. Schlee)

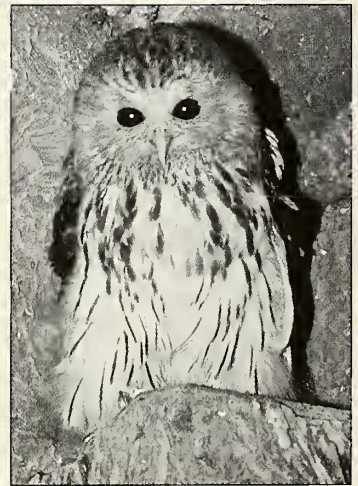


Figure 4 Captive adult Vermiculated Fishing Owl *S. bouvieri*. Chester Zoo 1993. (R. Wilkinson)

Figure 4 Chouette-pêcheuse de Bouvier, *S. bouvieri*, spécimen adulte au zoo de Chester, 1993. (R. Wilkinson)



Figure 5. Juvenile Rufous Fishing Owl *S. ussheri* Gola Forest, 1989. (P. Robertson)

Fig 5 Chouette-pêcheuse à dos roux, *S. ussheri*, spécimen juvénile en captivité. Forêt de Gola, 1989. (P. Robertson)

Size: Intermediate in size between Pel's and Vermiculated Fishing Owls but not a useful identification feature in the field.

Bare parts: Eyes disproportionately large and black.

Adult plumage: Head rounded though flattened at sides, no facial disc. Face cream-fawn unstreaked. Crown and back of head bright rufous with fine darker rufous streaking on crown, continuing down onto nape. Mantle rufous, unstreaked. All flight feathers rufous and uniform in colour with mantle and back, primaries with darker barring. Tail rufous and faintly barred. Under parts; breast to belly fawn and lightly streaked with rufous.

Immature plumage: Very similar to adult except head is a very pale buff or honey-brown⁹. On fledging, head and under parts white tinged honey-buff, retaining much downy white juvenile plumage (Figure 5).

Voice: A call attributed to Rufous Fishing Owl on tapes published by C. Chappuis¹⁰ is in fact White-crested Tiger Heron *Tigriornis leucolophus*¹¹ which puts in doubt some of the recent records in Côte d'Ivoire, which may be based on call alone⁹. We obtained a

recording of the Rufous Fishing Owl in London Zoo and a similar call described as a deep foghorn-like 'ooo' was heard by the UEA/ICBP expedition in Loma on several occasions. Although we played the tape of the London bird in the field, we heard no responses.

Vocalisations of fishing owls

One of us (R.R.) prepared sonograms, at 150 Hz band width, from sound recordings deposited in the British Library of Wildlife Sounds (BLOWS) of Rufous, Pel's and Vermiculated Fishing Owls.

In addition, for comparison, we made a sonogram of the recording by Chappuis, which he thought to be of Rufous Fishing Owl¹⁰ but which Fishpool *et al*¹¹ thought was White-crested Tiger Heron.

The adult female Rufous Fishing Owl we recorded at London Zoo gave single, soft dove-like low hoots at intervals of one minute. These were of a similar pitch (330 Hz v 300 Hz) to those in Chappuis' recording, but rather shorter in duration and differing in their harmonic structure (see Figures 6 and 7). Nonetheless, the similarity of the calls of Rufous Fishing Owl to those of White-crested Tiger Heron suggest that we should be cautious when assessing the validity of sound records not backed up by sightings in the same vicinity.

The bittern-like booming call of Pel's Fishing Owl (the *Hooooommm-but* of Fry *et al*⁷) is remarkably low-pitched, about one octave below the pitch of the Rufous Fishing Owl hoot (170 Hz v 330 Hz), and should be easily distinguishable (Figure 8). Fry *et al*⁷ also note a wail, given by large young of Pel's Fishing Owl and by females soliciting food (Figure 9). A similar but lower-pitched wail has been recorded in the Congo from Vermiculated Fishing Owl (Figure 10). Captive Vermiculated Fishing Owls also give a series of hoots (Figure 11 and 12). Whilst those recorded by J. M. Lernould had an irregular rhythm, the Chester Zoo female had a distinctive rhythm with an accelerating

Table 2 Main identification features of adult fishing owls

Table 2 Principaux traits permettant l'identification des chouettes-pêcheuses adultes

Character	Pel's	Rufous	Vermiculated
Breast & Belly	Pale rufous with streaking ending in black tips forming bold tear-drop markings	Pale rufous with faint rufous streaking	White with black streaking
Head	Rufous with pale facial disc	Rufous with pale facial disc	Rufous with pale facial disc Crown streaked with black
Bill	Black with grey cere	Black with yellow cere	Pale yellow sometimes tipped black
Mantle	Rufous with fine dusky barring	Dark rufous unstreaked	Rufous-cinnamon vermiculated with dark brown
Eyes	Black	Black (see text)	Black / dark brown
Legs and Feet	Pale straw and unfeathered	Yellow and unfeathered	Pale straw and unfeathered

series of six to eight hoots followed, after a short pause, by three more hoots. The Chester Zoo female gave these calls when disturbed by the keeper entering its aviary. Otherwise it rarely called.

Other descriptions of the calls of fishing owls are given in Bannerman¹², Mackworth-Praed and Grant⁶, McLachlan and Liversidge¹³ and Serle, Morel and Hartwig¹⁴. We can match some of these descriptions to sound recordings, for example Bannerman describes the calls of the Vermiculated Fishing Owl as *hu*, repeated a dozen times in quick succession, or a protracted wavering hoot. The first description resembles the hoot series of captive birds (Figure 11 and 12) and the latter the wail (Figure 10). Bannerman's protracted wavering hoot became a protracted quavering hoot in Mackworth-Praed and Grant¹². This is also probably synonymous with the low, protracted, croaking hoot *krooooook* of Fry *et al*⁷ whose description of a faster, clucking *krook krook ook-ook ook-ook* may fit the hoot series.

Only Fry *et al*⁷ describe the call of the Rufous Fishing Owl. This, noted as a low deep moaning *whoou*, is of Chappuis's recording, considered by Fishpool *et al*¹ to be of the White-crested Tiger Heron. Nonetheless, the description is more apt for the call recorded from the London Zoo Rufous Fishing Owl than the more growling call taped by Chappuis.

In contrast, the literature indicates a more extensive vocal repertoire for the more widely distributed and better-known Pel's Fishing Owl. This reflects the paucity of knowledge of the other two species from which analogous calls may be expected. Fry *et al*⁷ describe a sonorous hoot preceding the deeper, softer grunt *boooooommm-but* of the male, and a longer, softer *hoot*, followed by a shorter *hoot-oot* sometimes given in reply by the female. They also note that a series of grunts may precede hooting, and describe a penetrating trill when feigning injury. Bannerman noted a deep and resonant *hmmm*, probably the same call as the loud resonating, snoring note of Serle, Morel and Hartwig^{12,14} who also describe a loud screech.

Other, more evocative descriptions of the calls of Pel's Fishing Owl include 'a hoot rising to a loud screech and ending in a terrifying wail'¹⁶ and 'a weird screeching howl, which rises to a nerve-shattering crescendo, to peter out like a cry of a lost soul falling into a bottomless pit'¹³.

Discussion

The Upper Guinea forest, to which the Rufous Fishing Owl is endemic, has suffered severe deforestation, due directly to logging and agriculture and indirectly to fragmentation. Approximately 77 per cent of the origi-

nal forest area has now been cleared¹⁵. Further deforestation and fragmentation outside reserves will continue to threaten the survival of Rufous Fishing Owl if it is allowed to continue unabated. Fry *et al*⁷ note that the species is rare along large rivers in the Upper Guinea. Our information shows that the Rufous Fishing Owl inhabits not only large rivers, but also small rivers and secondary habitats.

Other information also supports these conclusions; Allport *et al*¹⁶ describe the area from where the recently fledged juvenile came as being 'a clump of bamboo by the edge of a stream, running through an extensive cocoa plantation, only 10 minutes walk from the village'. 'This habitat... was very degraded'. Demey and Fishpool⁹ recorded individuals from 'forested banks of the Bandama river where the bird landed in a bare tree and flew off into riverine forest'. These sightings are in character with our own in Loma.

It seems from recent records that Rufous Fishing Owl does not necessarily require large areas of primary forest and can survive in primary or secondary habitats, given suitable gallery forest. However, the inevitable disturbance caused by the clearing of forest could well contribute to the demise of this retiring species. Clearance would also increase the sediment loading of rivers, resulting in increased turbidity which could pose a threat to the foraging of fishing owls, which hunt visually.



Pel's Fishing Owl *Scotopelia peli*
by Nik Borrow (Birdquest)

If the current trend in deforestation continues then protected areas, such as national parks, will be the species' only refuge. Most recent records come from protected areas such as Mount Nimba in Liberia¹⁷, Gola and Loma in Sierra Leone and Tai, Azagny and Lamto in Côte d'Ivoire¹⁵. In the protected areas, such as Gola,

Tai, Azagny and Loma, where there is an abundance of watercourses surrounded by forest, intense searching would probably reveal more birds. The small number of records probably does not reflect the bird's true status.

Loma is intersected by numerous small streams and rivers and must therefore be considered a prime area for the conservation of the Rufous Fishing Owl. The remoteness of the area means disturbance is kept to a minimum with only occasional visits by hunters. None of those we encountered had any knowledge of the bird. Hunting, therefore, does not seem to be a threat in Loma. Women from the nearby villages visit the area regularly to inspect their 'water fences' (dams created to trap fish) which may actually benefit the owls by creating areas of still water in which they can fish.

Young birds seem especially vulnerable to trapping as evidenced by the number of birds caught before fledging. These are kept as pets or in zoo collections. It is essential that their habitat, throughout their range, is disturbed as little as possible to minimise the loss of young birds to hunters and children.

We have very little information on the ecological requirements of the Rufous Fishing Owl. The quality of rivers and surrounding forest seem to play a vital role in determining the distribution and abundance of birds; deforestation and the disturbance of rivers seem to be the greatest threat. It seems likely that its long term survival may depend on the forest reserves, which are few in number.

Acknowledgements

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Fishing owl sonograms

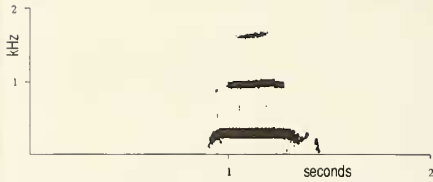


Figure 6 *Scotopelia ussheri* hoot. London Zoo, 27 June 1991, R. Ranft. BLOWS no. 40854.

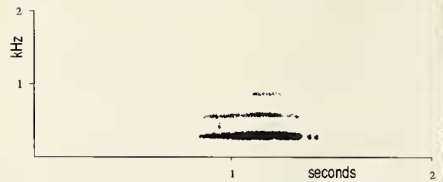


Figure 7 *Trigornis leucolophus* hoot. Lamto-N'Douci, Ivory Coast, 2 May 1976, C. Chappuis. From Chappuis¹⁰.

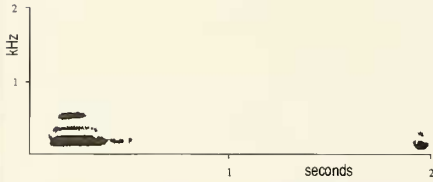


Figure 8 *S. peli* boom of single bird. Liwonde, Malawi. G. Gibbon. From Gibbon¹⁸.

Figure 6 Huhlement de *Scotopelia ussheri*, le 27 juin 1991 au zoo de Londres.

Figure 7 Huhlement de *Trigornis leucolophus*, le 2 mai 1976 à Lamto-N'Douci, Côte d'Ivoire.

Figure 8 'Boom' d'un oiseau solitaire, *S. peli*. Liwonde, Malawi.

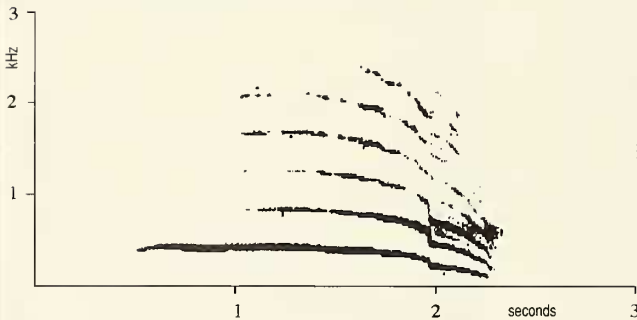


Figure 9 *S. peli* wail. Luangwa, Zambia, R. Stjernstedt. BLOWS no. 21304.

Figure 9 Cri de *S. peli*. Luangwa, Zambie.

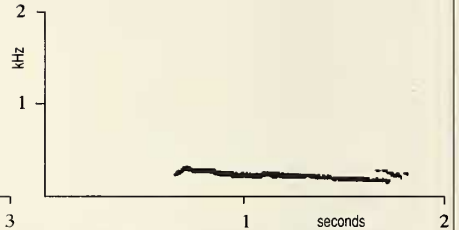


Figure 10. *S. bouvieri* wail. Bena, Kouilou region, Congo, 9 October 1990, F. Dowsett-Lemaire. BLOWS no. 35619

Figure 10 Cri de *S. bouvieri*, le 9 octobre 1990 à Bena, région de Kouilou, Congo.

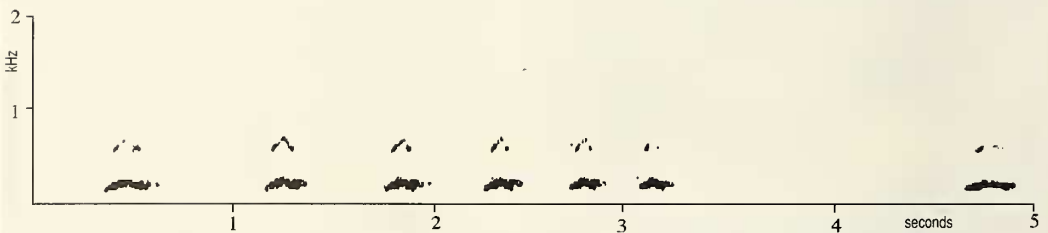


Figure 11 *S. bouvieri* hoot series. Captive (Chester Zoo), 22 Feb 1989, R. Wilkinson. BLOWS no 40906.

Figure 11 Série d'huhlements de *S. bouvieri* en captivité au zoo de Chester, le 22 février 1989.



Figure 12 *S. bouvieri* hoot series. Captive, 1973, J-M. Lemoind. From Chappuis¹¹.

Figure 12 Série d'huhlements de *S. bouvieri* en captivité, 1973, J-M. Lemoind. D'après Chappuis¹¹.